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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/522,429	01/25/2005	Valentin Lefevre	NY-GRYN 213-US (10500363)	7616
24972 7590 02/29/2008 FULBRIGHT & JAWORSKI, LLP 666 FIFTH AVE NEW YORK, NY 10103-3198			EXAMINER AMINI, JAVID A	
			ART UNIT 2628	PAPER NUMBER
			MAIL DATE 02/29/2008	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/522,429

Applicant(s)

LEFEVRE, VALENTIN

Examiner

Javid A. Amini

Art Unit

2628

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 December 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 27-52 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 27-30, 32-43, 45-52 is/are rejected.
- 7) ☐ Claim(s) 31 and 44 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

Response to Arguments

Applicant's arguments with respect to claims 27, 28, 30, and 40 have been considered but are moot in view of the new ground(s) of rejection.

The rejection under 35 U.S.C. 112 regarding claims 36 and 49 has been withdrawn.

Applicant amended claim 27 by inserting "... three dimensional geometric shapes with textures of two-dimensional images ...", the reference Daver in col. 6 lines 59-64 teaches that the synthetic image i.e. the ball, but Daver is silenced about having texture associated with the ball. It would have been obvious to an ordinary person skill in the art to recognize textures are two-dimensional images, the 2-D textures are mapped around 3-D images. Ahmed at [0042] teaches during the navigation procedure, with either MAAR or STAR, the user sees the patient's 3D imaging data augmented over the real surgical scene.

Examiner's comments regarding Applicant arguments on page 12 first paragraph, that Daver does not teach "performing a specific rendition of said scene by copying, upon rendering of said scene, said video buffer into said memory zone of said graphic board," the main part of the current claimed invention is about, how the video images are mixed or blended with synthetic images in the memory zone, however, the claimed invention 27 at third clause merely recited performing a specific rendition of the scene by copying ... but does not explicitly specify the type or kind or model of rendition of the scene by copying. Ahmed teaches in fig. 6c the view by the user through the user's head mounted display in which the virtual image of fig. 6a is overlaid on and in co-registration with the real image of fig. 6b, that is considered as the specific rendition of the scene by copying.

Examiner's comments: when a real image blended or mixed with a synthetic image that means they are displayable and they are stored in a graphical controller's memory/buffer/cache, see Ahmed in fig. 6c.

Allowable Subject Matter

Claims 31 and 44 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: copying even/odd video lines of the video buffer, at the time of a first rendering of the scene, into the dedicated texture; and applying a translation from the video buffer of about one half video line into the rendition of the scene either by modifying texture coordinates of the dedicated texture or the coordinates of the polygons textured by the dedicated texture.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 27, 28, 30, and 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Daver U.S. 5,513,854, and in view of Ahmed et al. U.S. 2005/0203367, hereinafter Ahmed.

Claim 27.

Daver teaches a method for enabling real-time mixing of synthetic images and video images by a user, comprising the steps of (i.e. noted in col. 1 lines 10-14): Daver teaches producing a flow of synthetic images by combining three dimensional geometric shapes with textures of two-dimensional images using a data processing unit comprising a motherboard (i.e. noted in col. 3 lines 41-44, the reference Daver in col. 6 lines 59-64 teaches that the synthetic image i.e. the ball.

But Daver is silenced about having texture associated with the ball. It would have been obvious to an ordinary person skill in the art to recognize textures are two-dimensional images, because the 2-D textures are mapped around 3-D images (fyi see, p.741 under texture mapping Foley et al. "computer graphics: principal and practice second edition"), a data processing unit comprising a motherboard is obvious); Daver teaches a graphic board for rendering and displaying said scene (i.e. noted in col. 6 lines 14-19), and comprising a 2D/3D processing acceleration processor (i.e. noted in col. 6 lines 59-64), and a memory zone comprising a work buffer and a texture memory (i.e. noted in col. 3 line 43-44 the bird's-eye view, and the memories are obvious); Daver teaches acquisition means for acquiring, in real time, video images in a video buffer; and tracing a scene by creating visual interactions between said flow of synthetic images and at least a flow of video images (i.e. noted in col. 3 lines 41-44);

Daver does not teach "performing a specific rendition of said scene by copying, upon rendering of said scene, said video buffer into said memory zone of said graphic board," the main part of the current claimed invention is about, how the video images are mixed or blended with synthetic images in the memory zone, in light of specification. However, the claimed invention 27 third clause merely recited performing a specific rendition of the scene by copying

... but does not explicitly specify the type or kind or model of rendition of the scene by copying. Ahmed teaches in fig. 6c the view by the user through the user's head mounted display in which the virtual image of fig. 6a is overlaid on and in co-registration with the real image of fig. 6b. Ahmed at [0042] teaches during the navigation procedure, with either MAAR or STAR, the user sees the patient's 3D imaging data augmented over the real surgical scene.

Thus, it would have been obvious to a person skill in the art at the time of the invention to combine Ahmed into Daver, because Ahmed's 3D images used texturing in fig. 6c that distinguishes the virtual from real images, on the other hand Ahmed's invention is used in a surgical area, therefore it would have been recognized the combination of Daver and Ahmed's system by an ordinary person skill in the art as a guided system with precise and adjusted magnification (see, 0022) would be beneficial to a user in order to produce cost-effective, real-time, interactive, transform the virtual environment from a flat, formless 2D experience to a more realistic and solid 3D experience, with minimal hardware.

Claim 28.

Daver teaches the method of claim 27, wherein the step of performing comprises the steps of: copying, upon each rendering of said scene, said video buffer into the said work buffer; and tracing said synthetic images into said work buffer (it is obvious because of the bird's eye view).

Claim 30.

Daver teaches the method according of claim 27, further comprising the steps of: initializing prior to the specific rendition by providing a dedicated texture in said texture memory of said graphic board, wherein said dedicated texture has the size of said video buffer and is dedicated

to copying said video buffer into said texture memory; and copying said video buffer into said dedicated texture and tracing said scene completely, using said dedicated texture to texture some of polygons of the said scene (the step of this claim is obvious because of the bird's eye view of Daver).

Claim 40.

Claim 40 is rejected with similar reason as set forth in claim 27, above.

Claims 29, 32-34, 38-39, 41-43, 45-47, and 51 are rejected under 35 U.S.C. 103(a) as being unpatentable over Daver, Ahmed and in view of Temkin et al. U.S. 7,098,888 B2, hereinafter Temkin.

Claim 29.

Daver and Ahmed does not explicitly specify the method of claim 28, wherein said video buffer comprises interlaced video lines; and further comprising the steps of: copying even video lines of said video buffer, upon a first rendition of said scene, into said work buffer; and copying odd video lines of said video buffer, upon the following rendition of said scene, into said work buffer.

Examiner's interpretation regarding the "interlaced video lines" in the claim, is as follows: interlace is to illuminate a screen by displaying all odd lines in the frame first and then all even lines. Interlacing uses half frames per second, that means a full frame takes two second.

However, Temkin teaches the method of claim 28, wherein said video buffer comprises interlaced video lines; and further comprising the steps of: copying even video lines of said video buffer, upon a first rendition of said scene, into said work buffer; and copying odd video

lines of said video buffer, upon the following rendition of said scene, into said work buffer (i.e. noted in col. 2 lines 29-51).

Thus, it would have been obvious to a person skill in the art at the time of the invention to combine Temkin into Daver and Ahmed, in order to produce cost-effective, real-time, interactive, transform the virtual environment from a flat, formless 2D experience to a more realistic and solid 3D experience, with minimal hardware.

Claim 32.

Daver teaches the method of claim 27, wherein said acquisition means comprises a driver having a new video buffer for each new video image; and wherein the step of performing renders said scene in synch with presentation of each new video buffer (i.e. noted in col. 4 lines 4-8).

Claim 33.

Daver teaches the method of claim 27, wherein said acquisition means comprises a driver having a new video buffer for each new video image; and further comprising the steps of: filling a buffer memory with each new video buffer, employing a video capture performance unit; copying one of the new video buffers contained in said buffer memory into said texture memory of said graphic board; and asynchronously performing the rendition of the said scene in relation to presentation of each new video buffer (i.e. noted in col. 4 lines 4-8).

Claim 34.

Temkin teaches the method of claim 27, further comprising the step of applying an anti-aliasing function in the tracing of said scene (i.e. noted in col. 4 lines 16-20).

Claims 38-39, 41-43, and 51.

Claims 38-39, 41-43, and 51 are rejected with similar reason as set forth in claim 29, above.

Claims 45-46.

Claims 45-46 are rejected with similar reason as set forth in claim 33, above. Examiner's interpretation regarding the limitation used in the claim 45 as "synchronously", in claim 33 used as "asynchronously", and since the outcomes of the claims 45 and 33 are similar then the limitations are considered as a design choice.

Claim 47.

Claim 47 is rejected with similar reason as set forth in claim 34, above.

Claims 35-36, and 48-49 are rejected under 35 U.S.C. 103(a) as being unpatentable over Daver, Ahmed and in view of Gianpaolo U. Carraro, John T. Edmark, J. Robert Ensor; Techniques for handling video in virtual environments; Proceedings of the 25th annual conference on Computer graphics and interactive techniques SIGGRAPH '98, hereinafter Carraro.

Claim 35.

Daver and Ahmed do not teach the method of claim 27, further comprising the step of applying a transparency function in the tracing of said scene.

However, Carraro teaches the method of claim 27, further comprising the step of applying a transparency function in the tracing of said scene (i.e. noted in fig. 1).

Thus, it would have been obvious to a person skill in the art at the time of the invention to combine Carraro into Daver and Ahmed, in order to provide two-dimensional images and video clips can successfully simulate three dimensional spaces.

Claim 36.

Carraro teaches the method of claim 27, further comprising the step of applying nonlinear distortions to said video buffer when texturing polygons of said scene using a dedicated texture, thereby correcting optical distortions of the video image (on last page at left column first paragraph).

Claim 48.

Claim 48 is rejected with similar reason as set forth in claim 35, above.

Claim 49.

Claim 49 is rejected with similar reason as set forth in claim 36, above.

Claims 37, 50, and 52 are rejected under 35 U.S.C. 103(a) as being unpatentable over Daver, Ahmed, and in view of Rybczynski US 6,348,953 B1.

Claim 37.

Daver and Ahmed not teach the method of claim 27, further comprising the step of applying pixel shader functions to said video buffer, thereby permitting the processing of chroma key type.

However, Rybczynski teaches the method of claim 27, further comprising the step of applying pixel shader functions to said video buffer, thereby permitting the processing of chroma key type (i.e. noted in fig. 2).

Thus, it would have been obvious to a person skill in the art at the time of the invention to combine Carraro into Daver and Ahmed, in order to conserve the optical resolution of the foreground image.

Claim 50 is rejected with similar reason as set forth in claim 37, above.

Claim 52 is rejected with similar reason as set forth in claim 37, above. It is obvious the data processor is slowing the display of the video images with respect to the display of the synthetic images. Examiner's note: what is the significant of having a slow system?

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Javid A. Amini whose telephone number is 571-272-7654. The examiner can normally be reached on 8-4pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kee Tung can be reached on 571-272-7794. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

J.A.



Javid A Amini
Examiner
Art Unit 2628